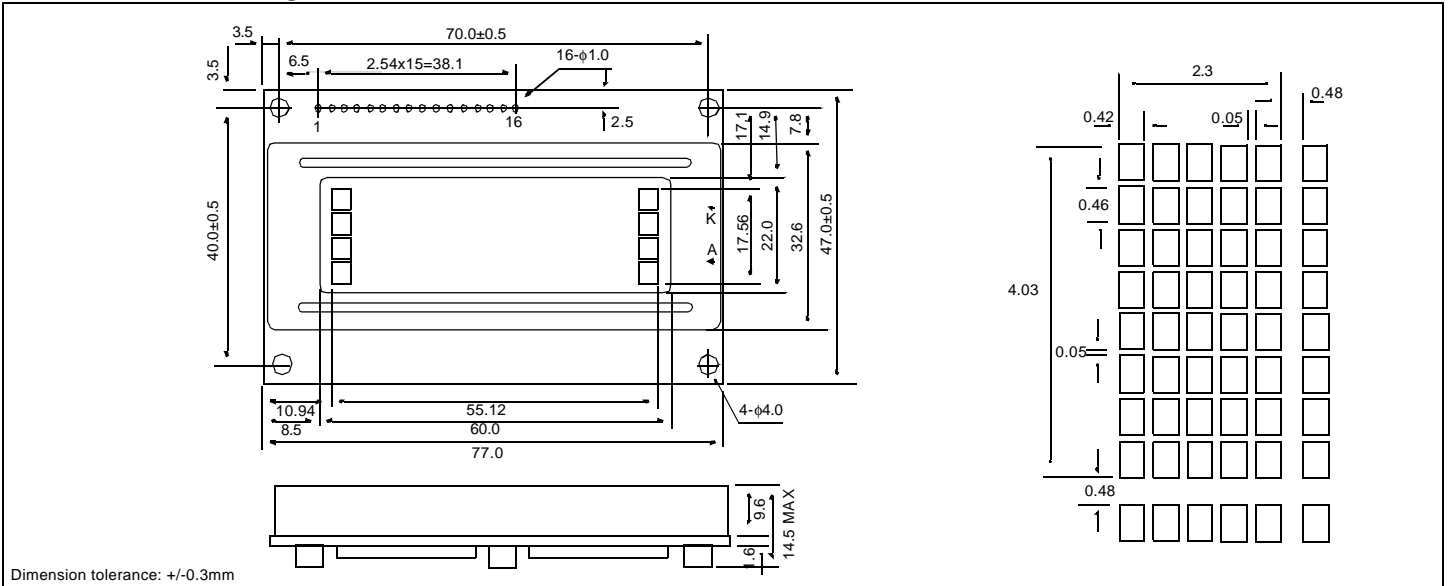


# HDM20416L-S

## Dimensional Drawing

20 Character x 4 Lines, Small Size, LED Backlight



### Features

Character Format ..... 5x7 Dots with Cursor Backlight.....LED Options.....Gray STN/Yellow STN, 12 o'Clock/6 o'Clock View Normal/Extended Temperature Normal/Negative Displays

### Physical Data

Module Size .....77.0W x 47.0H x 14.5T mm  
Viewing Area Size.....60.0W x 22.0H mm  
Weight.....60g

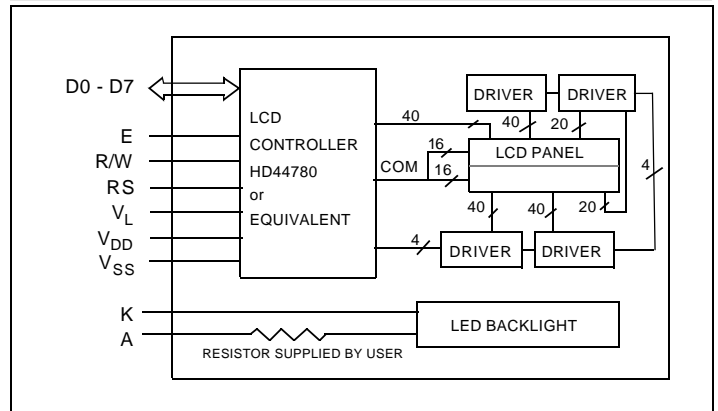
### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_L$	0	13.0	V
INPUT VOLTAGE	$V_{IN}$	$V_{SS}$	$V_{DD}$	V
OPERATING TEMPERATURE	$T_{OP}$	0	50	°C
STORAGE TEMPERATURE	$T_{STG}$	-20	70	°C
LED FORWARD CURRENT	$I_F$	-	300	mA
LED REVERSE VOLTAGE	$V_R$	-	8	V
LED POWER CONSUMPTION	$P_D$	-	1350	mW

### Electrical Characteristics (VDD=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	$V_{IH}$	-	2.2	-	-	V
INPUT LOW VOLTAGE	$V_{IL}$	-	-	-	0.6	V
OUTPUT HIGH VOLTAGE	$V_{OH}$	$I_{OH}=0.2mA$	2.4	-	-	V
OUTPUT LOW VOLTAGE	$V_{OL}$	$I_{OL}=1.2mA$	-	-	0.4	V
POWER SUPPLY CURRENT	$I_{DD}$	$V_{DD}=5.0V$	2.0	-	-	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25^\circ C$	4.3	-	4.7	V
LED FORWARD VOLTAGE	$V_F$	$I_F=110mA$	3.9	4.1	4.5	V
BRIGHTNESS	L	$I_F=110mA$	30	45	-	NIT
DRIVE METHOD		1/16 Duty				

### Block Diagram



### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	$V_{SS}$	-	0V
2	$V_{DD}$	-	5V
3	$V_L$	-	-
4	RS	H/L	H: Data input L: Instruction data input
5	R/W	H/L	H: Data read L: Data write
6	E	H,H→L	Enable signal
7	D0	H/L	Data bus
8	D1	H/L	
9	D2	H/L	
10	D3	H/L	
11	D4	H/L	
12	D5	H/L	
13	D6	H/L	
14	D7	H/L	
15	A	-	Anode for LED backlight
16	K	-	Cathode for LED backlight